ABSTRACT OF THE DISCLOSURE

In an abnormality detection system that detects abnormality in an oxygen sensor including a detection element for outputting a current value corresponding to an oxygen concentration upon receipt of a voltage application, a negative value is applied to the oxygen sensor so as to obtain an impedance of the detection element. Then a difference between the obtained impedance of the oxygen sensor upon application of the negative voltage and the impedance of the oxygen sensor upon application of a positive voltage prior to the negative voltage application is calculated. It is determined whether there is abnormality in the oxygen sensor based on the calculated difference.